## DETAILED ACTION

### Status of Claims

1. Claims 1-8 remain pending in the current application. After non-final rejection, applicant has left all claims in their originally presented form. The Examiner has carefully considered each of Applicant's remarks and arguments, and the responses can be seen below.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-8** are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 5,800,147 to Arai et al. directed to a Swash Plate Compressor.

*FIG.7*

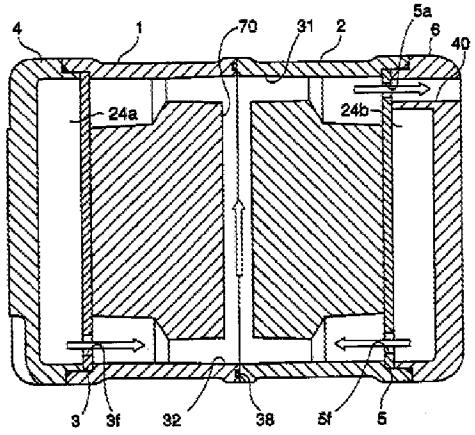
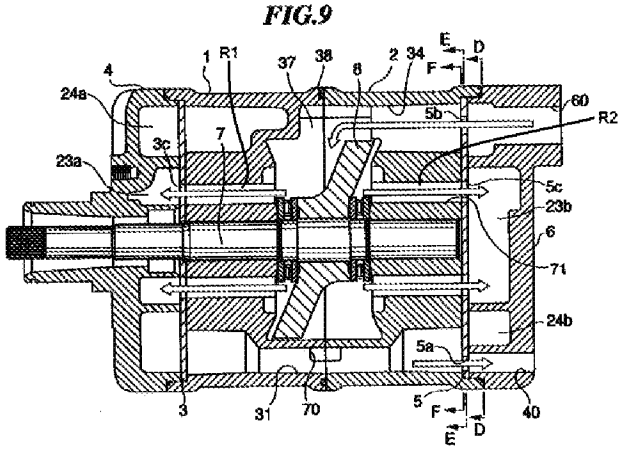



*FIG.9*



In regards to Independent **Claim 1**, and with particular reference to Figures 7 & 9 shown immediately above, Arai et al. discloses:

A swash plate compressor, comprising: a housing having formed therein cylinders (1, 2); a drive shaft (7) rotatably supported at said housing; a swash plate (8) that is housed inside a swash plate chamber (37) formed at said housing and rotates as one with said drive shaft (7); and pistons (12) that slide reciprocally inside the cylinder bore (1, 2) as said swash plate (8) rotates, wherein a front-side intake chamber (23a) and a rear-side intake chamber (23b) disposed to the front and to the rear of said swash plate chamber (37) along the axial direction, in which a working fluid to be guided into said cylinders (1, 2) is stored, a front-side outlet chamber (24a) and a rear-side outlet chamber (24b) disposed to the front and to the rear of said swash plate chamber (37) along the axial direction, in which the working fluid having been compressed by said pistons (12) is stored, a first gas passage (34) and a second gas passage (33) extending along the axial direction, a third gas passage (31) formed substantially symmetrical to said first gas passage relative to a plane containing said drive shaft (7), a fourth gas passage (32) formed substantially symmetrical to said second gas passage (31) relative to the plane containing said drive shaft (7) and communicating with said second gas passage (33) and an external component (an evaporator, not shown) that includes an intake port and an outlet port to be connected to piping, are all disposed at said housing; wherein either said first gas passage (34) or said third gas passage (31) is made to communicate with said

intake port (60) to supply the working fluid into said front-side intake chamber (23a) and said rear-side intake chamber (23b); and wherein either said second gas passage (33) or said fourth gas passage (32) is made to communicate with said front-side outlet chamber (24a) and said rear-side outlet chamber (24b) and said second gas passage (33) or said fourth gas passage (32), which is not in communication with said outlet chambers, is made to communicate with said outlet port (40).

As shown in the Figures above, Arai et al. discloses a swash plate compressor for the compressing of a refrigerant gas in a refrigerant circuit. The compressor contains front- and rear-side inlet chambers, as well as front- and rear-side discharge chambers, for storing refrigerant gas in its un-compressed and compressed states, respectively. To begin, Arai et al. first describes the basic compressor structure by stating "The swash plate compressor includes cylinder blocks 1 and 2 arranged on a front side and a rear side, respectively, and front and rear heads 4 and 6 secured to a front-side end of the front-side cylinder block and a rear-side end of the rear-side cylinder block, respectively…The cylinder block 1 is formed with a through hole 50 through which a drive shaft 7 extends, five cylinder bores 11 which are arranged at predetermined circumferentially-spaced intervals around the through hole 50 and extend longitudinally in a fashion parallel with the through hole 50, three refrigerant outlet passages 31 to 33 which extend in a fashion parallel with the cylinder bores 11, and a refrigerant inlet passage 34 through which low-pressure refrigerant flows." (Column 4, Lines 15-32) Most importantly, however, is the structure of the refrigerant

passages (i.e. gas passages) disclosed in Arai. In particular, Arai states "The refrigerant outlet passages 32, 33, communicate with discharge chambers 24a and 24b via ports 3f and 5f formed through a valve plate 3 and a valve plate 5, respectively, and the other refrigerant outlet passage 31 communicates with a discharge port 40 via a port 5a. Further, a guide passage 70 which communicates an intermediate portion of the refrigerant outlet passage 31 with an intermediate portion of the refrigerant outlet passage 32 extends in a junction of the cylinder blocks 1 and 2." (Column 4, Lines 34-43) In Arai's compressor, passages 34 and 31 act as the refrigerant gas inlet passages, while passages 33 and 32 acts as the refrigerant gas outlet passages (i.e. a total of 4 gas passages). Hence, it can be seen that either the first or third gas passage is made to communicate with the intake port 40, while either the second or fourth gas passage is made to communicate with the outlet port 60. More specifically, Arai discloses that the discharge passage that is NOT in communication with the discharge port is in communication with the outlet chambers. In particular, Arai states "According to the invention, since the cylinder block has the guide passage therein for communicating the intermediate portion of any of the at least two refrigerant outlet passages other than the one of the at least two refrigerant outlet passages being communicated with the discharge port, with the one of the at least two refrigerant outlet passages being communicated with the discharge port, refrigerant is permitted to flow from the former, which is not communicated with the discharge port, to the latter, which is communicated with the discharge port, whereby refrigerant is prevented from becoming standing within the any of the refrigerant outlet passages other than the refrigerant outlet passage

communicated with the discharge port." (Column 2, Line 66 – Column 3, Line 11) Therefore, it can be seen that Arai contains Applicant's four claimed gas passages, structured in the same way.

4. In regards to dependent **Claim 2**, it can be seen in Figure 9 that relay passages (R1 and R2) are formed with the first and third gas passages (34, 31) in order to communicate the swash plate chamber with the front- and rear intake chambers (23a, 23b). Regarding dependent **Claims 3 and 4**, and with reference to Figures 7 & 9 above, as well as Figure 11 of Arai, it can be seen that valve plates are disposed between front- and rear-side cylinder heads (4, 6) in order to control the inflow and outflow of refrigerant gas. To begin Arai states "The refrigerant outlet passages 32, 33, communicate with discharge chambers 24a and 24b via ports 3f and 5f formed through a valve plate 3 and a valve plate 5, respectively, and the other refrigerant outlet passage 31 communicates with a discharge port 40 via a port 5a." (Column 4, Lines 34-39) Moreover, Arai discloses "The valve plate 5 is formed therethrough with the port 5a and a port 5b which communicate the refrigerant inlet passage 34 and the refrigerant outlet passage 31 in the cylinder block 2 with the suction port 60 and the discharge port 40 in the rear head 6, respectively, and ports 5c which communicate passages 71 in the cylinder block 2, which communicate with the swash plate chamber 37, with the suction chamber 23b." (Column 5, Lines 8-15) Finally, Arai states that the valve plates utilize inlet and outlet valves by stating "During the suction stroke, suction valves 25, 26 open to permit refrigerant to flow from the suction chambers 23a, 23b into the compression

chambers 21, 22 via ports 3d, 5d, respectively. During the compression stroke, the refrigerant compressed by the piston 12 within the respective compression chambers 21, 22 opens discharge valves 27, 28 to flow into the discharge chambers 24a, 24b via ports 3e, 5e as a high-pressure refrigerant, respectively. (Column 5, Lines 45-53) In regards to dependent **Claims 5 and 6**, Figure 9 best shows that the cylinder blocks (1, 2) and cylinder heads (4, 6) constitute components that form the four gas passages (31-34). Regarding dependent **Claim 7**, the housing forming the cylinder blocks (1, 2) is used commonly on a front- and rear-side of the compressor. And finally, in regards to dependent **Claim 8**, the gas passages (31-34) can be selected for different gas flow paths depending on the positions assumed by the intake and discharge ports of the compressor.

### ***Response to Arguments***

5. Applicant's arguments filed March 16th, 2009 have been fully considered but they are not persuasive. The Examiner's responses can be seen below.

6. In regards to Applicant's argument that the Examiner's analysis is incorrect, the Examiner apologizes for the typographical error stating that passage 31 was also an inlet passage. The Examiner agrees that only passage 34 is an inlet passage, while passages 31-33 are all outlet passages. However, even in light of this, the Examiner must respectfully disagree with Applicant's assertion that an intake channel of Arai is not connected to either channel 34 or channel 31. Because Applicant's language

claims “channel 34 or channel 31", if the intake channel is connected to either of these channels, the reference reads upon the claim. Because of this, the Examiner must assert that because channel 34 does, as Applicant has asserted in the remarks, communicate primarily with the inlet channel, Arai is structured in the same way as Applicant’s claimed invention. Moreover, the Examiner refers Applicant to Figure 12 of Arai to show that channels 31-34 are, contrary to Applicant’s assertion, arranged symmetrically with one another along the axial length of the drive shaft. This symmetry provides Arai with the same degree of simplicity and versatility as Applicant’s claimed passage structure.

7. In regards to Applicant’s argument that the channel 31 of Arai is only connected to the outlet port, and not communicated with the swash plate chamber, the Examiner must respectfully disagree. Channel 31, as can be seen in Figures 7 and 9 of the previous Office Action, is indirectly communicated with the swash plate chamber 37 through relay passages R1 and R2 and intake chambers 23a and 23b.

8. In regards to Applicant’s argument that the valve plate of Arai does not contain a symmetrical hole structure, the Examiner must respectfully disagree. Applicant points to Figure 11 of Arai to show that the hole structure is not symmetrical in nature. However, the Examiner must assert that the hole structures seen in both Figure 11 and 12 are, in fact, quite symmetrical across a center line of the valve plate.

***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER B. COMLEY whose telephone number is (571)270-3772. The examiner can normally be reached on M-F 7:30am - 5:00am EST (Alternate Fridays Off). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon C. Kramer can be reached on (571)-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alexander B Comley/
Examiner, Art Unit 3746

/Charles G Freay/
Primary Examiner, Art Unit 3746

ABC